

RESPONSE  
SN 09/924,022  
PAGE - 6 of 16 -

### **REMARKS**

In the Office Action, the Examiner noted that claims 1-27 are pending in the application and that claims 1-27 are rejected. In view of the following discussion, the Applicant submits that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. §102 or are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicant believes that all of these claims are now in condition for allowance.

#### **I. REJECTION OF CLAIMS 1-3, 7, 12, 13, 18, 21 AND 24 UNDER 35 U.S.C. §102**

The Examiner rejected claims 1-3, 7, 12, 13, 18, 21 and 24 as being anticipated by the Freeburg patent (United States patent number 4,850,032, issued July 18, 1989, hereinafter Freeburg). The rejection is respectfully traversed.

Freeburg teaches a data communication system that communicates messages by way of a radio frequency channel between a network control processor (NCP 102) and subscriber radios (190). (see Abstract).

The Examiner's attention is directed to the fact that Freeburg, however, does not teach each and every element of Applicant's invention as recited in independent claims 1, 18, 21, 24, and 27. Namely, Freeburg does not teach or suggest the simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station. Specifically, Applicant's independent claims 1, 18, 21, 24 and 27 respectively recite:

1. A method for determining a location of a mobile station, comprising:  
receiving a plurality of simulcast signals having substantially identical information from a plurality of base stations;  
determining relative time of arrival information for the received plurality of simulcast signals; and  
determining a position of the mobile station by said mobile station. (Emphasis added)
18. A method for receiving location information for a mobile station, comprising:  
transmitting simulcast signals having substantially identical information to the mobile station; and  
receiving mobile station location information from the mobile station determined from relative time of arrival information for the simulcast signals. (Emphasis added)
21. A mobile station, comprising:

## RESPONSE

SN 09/924,022

PAGE - 7 of 16 -

a receiver for receiving simulcast signals having substantially identical information from a plurality of base stations; and  
a processor for determining time of arrival information for the received simulcast signals and identifying a location of the mobile station. (Emphasis added)

24. A wireless network for providing location specific information to a mobile station, comprising:

a plurality of base stations for transmitting simulcast signals having substantially identical information;

a mobile station for receiving the simulcast signals and determining a location of the mobile station. (Emphasis added)

27. A wireless network, comprising:

a plurality of base stations for transmitting simulcast signals having substantially identical information to mobile stations and receiving mobile station location information derived by the mobile stations from at least one of the mobile stations to broadcast location specific information to the mobile stations. (Emphasis added)

The Applicant's invention teaches a method for determining the location of a mobile station utilizing simulcasted signals that are transmitted from a plurality of base stations. Simulcasting is the transmission of a particular signal from a plurality of base stations at the same moment in time. Specifically, the Applicant describes simulcasting as the "simultaneous transmission of substantially the same information content from multiple base stations" (See e.g., Applicant's specification, page 5, paragraph 3). Namely, simulcasting creates an artificial multipath environment that is used by the Applicant's system to create diversity. Applicant's invention teaches a system that can simulcast simultaneous transmission of substantially identical information from a plurality of basestations BS1-N. With this arrangement, the link performance is improved by simulating multipath. Since the same signal from multiple base stations is received by a mobile station, the difference in path delay results in frequency selective fading with narrow spacing between multipath nulls interacting with the inherent frequency diversity of the OFDM system. (See e.g., Applicant's specification, page 6, paragraph 5).

Furthermore, the mobile station is able to determine its location or position from the received simulcasted signals. Namely, the mobile station's location or position is determined or derived by the mobile station itself by using the received simulcasted

RESPONSE  
SN 09/924,022  
PAGE - 8 of 16 -

signals. (See e.g., Applicant's specification, page 5, paragraphs 2 and 4; page 6, paragraph 2)

In contrast, the Freeburg reference does not teach this aspect of the invention. In fact, Freeburg teaches away from Applicant's invention. Freeburg teaches that it is the network control processor (NCP 102) that is tasked with determining the location of the subscriber radio. In other words, Freeburg's subscriber radio is incapable of determining its own location, but instead, relies on the network processor to derive the location information from acknowledgement messages received from the subscriber radio. Thus, Freeburg's approach is directly contrary from that of Applicant's approach where it is the mobile station that is deriving the location or position of the mobile station. Thus, Applicant's approach is able to scale easily as the number of mobile stations increases for a service provider. In contrast, Freeburg's approach necessitates the communication between the NCP and the subscriber radio with respect to the acknowledgement messages, thereby consuming communication channel bandwidth and requiring the NCP to perform numerous calculations to determine location information for all of the subscriber radios. Thus, Freeburg's approach does not scale well as the number of subscriber radio increases, and will consume a larger amount of network resources in terms of communication channel bandwidth and network processing resources. Therefore, the Applicant contends that independent claims 1, 18, 21, 24 and 27 are not anticipated by Freeburg and, as such, fully satisfy the requirements of 35 U.S.C. §102.

Dependent claims 2-3, 7, 12, and 13 depend, either directly or indirectly, from claim 1 and recite additional features thereof. As such and for the exact same reasons set forth above, the Applicant submits that claims 2-3, 7, 12, and 13 are also not anticipated by the teachings of Freeburg. Therefore, the Applicant submits that claims 2-3, 7, 12, and 13 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

RESPONSE  
SN 09/924,022  
PAGE - 9 of 16 -

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SEP 02 2008

## **II. REJECTION OF CLAIMS UNDER 35 U.S.C. §103**

### **A. Claims 4, 19, 22, and 25**

The Examiner rejected claims 4, 19, 22, and 25 as being unpatentable over Freeburg in view of Kostic (U.S. Patent 6,885,630, issued April 26, 2005).

The Applicant respectfully submits that Kostic is not a proper reference against the Applicant's invention under 35 U.S.C. § 103(c). As the Kostic patent was filed on January 3, 2001 and published on July 4, 2002 which is after the Applicant's August 7, 2001 filing date, the published Kostic patent is a 102(e) type reference. The published Kostic patent was assigned to AT&T Corp. (Please see Assignee's name on the first page of Kostic).

The Applicant's invention was also assigned to AT&T Corp. Thus, the Applicant's invention and the published Kostic patent were commonly assigned at the time of the Applicant's invention. Since this application is an application filed on or after November 29, 1999, the published Kostic patent application does not preclude patentability under the provisions of 35 U.S.C. § 103(c), as amended by the American Inventors Protection Act of 1999. See MPEP 706.02(I)(1).

Thus, for all of the above reasons, the Applicant respectfully contends that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freeburg and Kostic.

Moreover, dependent claims 4, 19, 22, and 25 depend from independent claims 1, 18, 21 and 24, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg and Kostic, the Applicant submits that claims 4, 19, 22, and 25 are also patentable over Freeburg and Kostic. As such, the Applicant respectfully requests the rejection be withdrawn.

### **B. Claims 5 and 6**

The Examiner rejected claims 5 and 6 as being unpatentable over Freeburg and Kostic and further in view of the Stilp et al. patent (United States patent publication

RESPONSE  
SN 09/924,022  
PAGE - 10 of 16 -

2005/0206566, published on September 22, 2005, hereinafter referred to as Stilp). The rejection is respectfully traversed.

As stated above, the Applicant respectfully submits that Kostic is not a proper reference against the Applicant's invention under 35 U.S.C. § 103(c). As the Kostic patent was filed on January 3, 2001 and published on July 4, 2002 which is after the Applicant's August 7, 2001 filing date, the published Kostic patent is a 102(e) type reference. The published Kostic patent was assigned to AT&T Corp. (Please see Assignee's name on the first page of Kostic).

The Applicant's invention was also assigned to AT&T Corp. Thus, the Applicant's invention and the published Kostic patent were commonly assigned at the time of the Applicant's invention. Since this application is an application filed on or after November 29, 1999, the published Kostic patent application does not preclude patentability under the provisions of 35 U.S.C. § 103(c), as amended by the American Inventors Protection Act of 1999. See MPEP 706.02(I)(1).

Thus, for all of the above reasons, the Applicant respectfully contends that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freiburg, Kostic and Stilp.

Moreover, dependent claims 5 and 6 depend from independent claim 1, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freiburg, Kostic and Stilp, the Applicant submits that claims 5 and 6 are also patentable over Freiburg, Kostic and Stilp. As such, the Applicant respectfully requests the rejection be withdrawn.

### **C. Claims 8, 10 and 11**

The Examiner rejected claims 8, 10 and 11 as being unpatentable over Freiburg in view of Watters et al. (U.S. Patent 5,982,324, issued November 9, 1999, hereinafter referred to as Watters). Applicant respectfully traverses the rejection.

RESPONSE  
SN 09/924,022  
PAGE - 11 of 16 -

The teachings of Freeburg are discussed above. Watters teaches the combination of GPS with TOA/TDOA of cellular signals to locate a terminal. (See Watters, Abstract)

The Examiner's attention is directed to the fact that Freeburg and Watters, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station, as positively claimed by the Applicants' independent claims 1, 18, 21, 24 and 27. (See *supra*). As discussed above, Freeburg simply does not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station.

Moreover, Watters does not bridge the substantial gap left by Freeburg because Watters also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station. Thus, for all of the above reasons, the Applicants respectfully contend that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freeburg and Watters.

Moreover, dependent claims 8, 10, and 11 depend from independent claim 1 and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg and Watters, the Applicant submits that claims 8, 10, and 11 are also patentable over Freeburg and Watters. As such, the Applicant respectfully requests the rejection be withdrawn.

#### D. Claim 9

The Examiner rejected claim 9 as being unpatentable over Freeburg in view of Baum et al. (U.S. Patent 5,867,478, issued February 2, 1999, hereinafter referred to as Baum). Applicant respectfully traverses the rejection.

The teachings of Freeburg are discussed above. Baum teaches a synchronous coherent orthogonal frequency division multiplexing system. (See Baum, Abstract)

RESPONSE  
SN 09/924,022  
PAGE - 12 of 16 -

The Examiner's attention is directed to the fact that Freeburg and Baum, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station, as positively claimed by the Applicants' independent claims 1, 18, 21, 24 and 27. (See *supra*). As discussed above, Freeburg simply does not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station.

Moreover, Baum does not bridge the substantial gap left by Freeburg because Baum also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station. Thus, for all of the above reasons, the Applicants respectfully contend that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freeburg and Baum.

Moreover, dependent claim 9 depends from independent claim 1 and recites additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg and Baum, the Applicant submits that claim 9 is also patentable over Freeburg and Baum. As such, the Applicant respectfully requests the rejection be withdrawn.

#### **E. Claims 14-16 and 23**

The Examiner rejected claims 14-16 and 23 as being unpatentable over Freeburg in view of Budnik. Responsive to the Examiner, Applicant respectfully requests that the Examiner provides further clarification on this rejection. Specifically, the Examiner provided no patent number or publication application number associated with the reference "Budnik". A search of the USPTO website produced numerous references with the inventor name "Budnik". As such, Applicant is unsure as to which reference is actually being applied in the present rejection.

However, for the purpose of being responsive to the Examiner, Applicant again reiterates the position that Freeburg alone fails to anticipate or make obvious

RESPONSE  
SN 09/924,022  
PAGE - 13 of 16 -

Applicant's independent claims 1, 18, 21, 24 and 27 of the present invention and that it is believed that these independent claims may not be made obvious by the combination of Freeburg and Budnik.

Moreover, dependent claims 14-16, and 23 depend from independent claims 1 and 21 and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg and Budnik, the Applicant submits that claims 14-16, and 23 are also patentable over Freeburg and Budnik. As such, the Applicant respectfully requests the rejection be withdrawn.

#### F. Claim 17

The Examiner rejected claim 17 as being unpatentable over Freeburg and Budnik and in further view of Oren (US patent 6,725,045). Responsive to the Examiner, Applicant respectfully requests that the Examiner provides further clarification on this rejection. Specifically, the Examiner provided no patent number or publication application number associated with the reference "Budnik". A search of the USPTO website produced numerous references with the inventor name "Budnik". As such, Applicant is unsure as to which reference is actually being applied in the present rejection.

However, for the purpose of being responsive to the Examiner, Applicant again reiterates the position that Freeburg alone fails to anticipate or make obvious Applicant's independent claims 1, 18, 21, 24 and 27 of the present invention and that it is believed that these independent claims may not be made obvious by the combination of Freeburg, Budnik and Oren.

Moreover, dependent claim 17 depends from independent claim 1 and recites additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Budnik and Oren, the Applicant submits that claim 17 is also patentable over Freeburg, Budnik, and Oren. As such, the Applicant respectfully requests the rejection be withdrawn.



RESPONSE  
SN 09/924,022  
PAGE - 14 of 16 -

#### **G. Claims 20 and 26**

The Examiner rejected claims 20 and 26 as being unpatentable over Freeburg and Kostic and further in view of the Oren. The rejection is respectfully traversed.

As stated above, the Applicant respectfully submits that Kostic is not a proper reference against the Applicant's invention under 35 U.S.C. § 103(c). As the Kostic patent was filed on January 3, 2001 and published on July 4, 2002 which is after the Applicant's August 7, 2001 filing date, the published Kostic patent is a 102(e) type reference. The published Kostic patent was assigned to AT&T Corp. (Please see Assignee's name on the first page of Kostic).

The Applicant's invention was also assigned to AT&T Corp. Thus, the Applicant's invention and the published Kostic patent were commonly assigned at the time of the Applicant's invention. Since this application is an application filed on or after November 29, 1999, the published Kostic patent application does not preclude patentability under the provisions of 35 U.S.C. § 103(c), as amended by the American Inventors Protection Act of 1999. See MPEP 706.02(I)(1).

Thus, for all of the above reasons, the Applicant respectfully contends that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freeburg, Kostic and Oren.

Moreover, dependent claims 20 and 26 depend from independent claims 18 and 24, respectively and recite additional limitations. As such, and for the exact same reason set forth above with regard to the independent claims being patentable over Freeburg, Kostic and Oren, the Applicant submits that claims 20 and 26 are also patentable over Freeburg, Kostic and Oren. As such, the Applicant respectfully requests the rejection be withdrawn.

#### **H. Claim 27**

The Examiner rejected claim 27 as being unpatentable over Freeburg in view of Oren. Applicant respectfully traverses the rejection.

The teachings of Freeburg are discussed above. Oren teaches a method and system for locating people and routing telephone calls to telephone stations selected by

RESPONSE  
SN 09/924,022  
PAGE - 15 of 16 -

the called party. According to some embodiments of the present invention, the system may include wireless personal units and a location and routing unit adapted to locate the personal units and to route an incoming call intended for a telephone user associated with a particular personal unit to any one of the telephone stations selected by the telephone user (See Oren, Abstract).

The Examiner's attention is directed to the fact that Freeburg and Oren, alone or in any permissible combination, fail to disclose the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station, as positively claimed by the Applicants' independent claims 1, 18, 21, 24 and 27. (See *supra*). As discussed above, Freeburg simply does not teach or suggest a method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station.

Moreover, Oren does not bridge the substantial gap left by Freeburg because Oren also fails to teach or suggest the novel method of simulcasting of signals to a mobile station from a plurality of base stations and determining a position of the mobile station by said mobile station. Thus, for all of the above reasons, the Applicants respectfully contend that claims 1, 18, 21, 24 and 27 of the present invention are not made obvious by the combination of Freeburg and Oren. As such, the Applicant respectfully requests the rejection be withdrawn.

RESPONSE  
SN 09/924,022  
PAGE - 16 of 16 -

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### III. CONCLUSION

Thus, Applicant submits that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. §102 or obvious under the provisions of 35 U.S.C. §103. Consequently, Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the present adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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Date

  
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